

Chapter 9 Questions

1. The vertices of $\triangle LMN$ are $L(2,2)$, $M(5,3)$, $N(9,1)$.
Translate $\triangle LMN$ using the vector $\langle -2, 6 \rangle$.

2. Multiply.

$$\begin{bmatrix} a & 1 & 2 \\ 8 & -1 & 4 \end{bmatrix} \begin{bmatrix} 4 \\ 0 \\ 1 \end{bmatrix}$$

3. Use matrix multiplication to find the image.

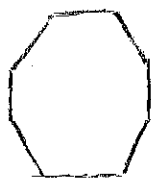
Reflect $\begin{matrix} A & B & C \\ \begin{bmatrix} -2 & 3 & 4 \\ 5 & -3 & 6 \end{bmatrix} \end{matrix}$ in the x -axis.

4. Find the image matrix that represents the rotation of the polygon about the origin. Then graph the polygon + image.

$$\begin{matrix} A & B & C \\ \begin{bmatrix} 1 & 5 & 4 \\ 4 & 6 & 3 \end{bmatrix} \end{matrix}, 90^\circ$$

5. The vertices of $\triangle ABC$ are $A(7,1)$, $B(3,5)$, and $C(10,7)$.
Graph the reflection in the line.
- y -axis

6. How many lines of symmetry does this figure have?



(octagon)

7. Simplify the product.

$$4 \begin{bmatrix} 3 & 7 & 4 \\ 0 & 9 & -1 \end{bmatrix}$$

8. Find the image matrix that represents the translation.
Then graph the polygon and its image.

$$\begin{matrix} A & B & C \\ \begin{bmatrix} 2 & 8 & 1 \\ 4 & 3 & 2 \end{bmatrix} \end{matrix}$$

5 units up and 3 units left

9. Multiply

$$\begin{bmatrix} 7 & -3 & 2 \\ 5 & 1 & -4 \end{bmatrix} \begin{bmatrix} 1 \\ 0 \\ 3 \end{bmatrix}$$

10. Find the image matrix that represents a dilation of the polygon that is centered at the origin.

$$\begin{matrix} Q & R & S \\ \begin{bmatrix} 2 & 4 & 8 \\ 2 & 4 & 2 \end{bmatrix} \end{matrix}; k = 1/4$$

Chapter 9 Answers

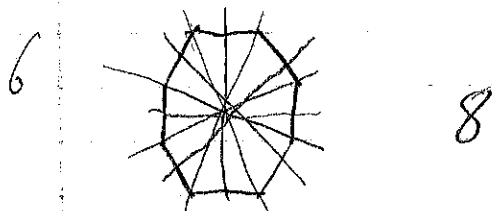
1. $L(0, 8)$ $M(3, 4)$ $N(7, 7)$

2. $\begin{bmatrix} 3 & 8 \\ 3 & 6 \end{bmatrix}$

3. $\begin{array}{ccc} A & B & C \\ \begin{bmatrix} -2 & 3 & 4 \\ -5 & 3 & -6 \end{bmatrix} \end{array}$

4. $\begin{array}{ccc} A & B & C \\ \begin{bmatrix} -4 & -6 & 3 \\ 1 & 5 & 4 \end{bmatrix} \end{array}$

5. $A(-7, 1)$ $B(-3, 5)$ $C(-10, 7)$



7. $\begin{bmatrix} 12 & 28 & 16 \\ 0 & 36 & -4 \end{bmatrix}$

8. $\begin{array}{ccc} A & B & C \\ \begin{bmatrix} -1 & 5 & -2 \\ 9 & 8 & 7 \end{bmatrix} \end{array}$

9. $\begin{bmatrix} 13 \\ -7 \end{bmatrix}$

10. $\begin{array}{ccc} Q & R & S \\ \begin{bmatrix} .5 & 1 & 2 \\ .5 & 1 & .5 \end{bmatrix} \end{array}$

